

# REMARKS

Claims 1, 5-20, 22-34, 47-50, and 52-56 are pending. Claims 2-4, 21, 35-46, and 51 are canceled without prejudice. Claims 1, 5-20, 22-34, 47-50, and 52-56 are rejected under 35 U.S.C. § 103(a).

Claim 4 is objected to as depending from canceled claim 3. Claim 4 has been canceled without prejudice. Claims 5 and 6, previously depending from claim 4, have been amended to depend from claim 1.

Independent claims 1, 20, and 25 are rejected under 35 U.S.C. § 103(a) over applicant's admitted prior art (AAPA) in view of Scott et al. (U.S. Pat. No. 6,154,486) and further in view of De Gaudenzi et al. (U.S. Pat. No. 6,466,566). Independent claims 11 and 47 are rejected under 35 U.S.C. § 103(a) over Scott et al. in view of Miller et al. (U.S. Pat. No. 5,608,722) in further view of De Gaudenzi et al. Independent claim 23 is rejected under 35 U.S.C. § 103(a) over Scott et al. in view of Miller in further view of De Gaudenzi et al. in further view of Bottomley (U.S. Pat. No. 5,237,586). Independent claim 30 is rejected under 35 U.S.C. § 103(a) over Miller in view of Scott et al. in view of in further view of De Gaudenzi et al. The rejection of each independent claim, therefore, rests on at least a combination of Scott et al. and De Gaudenzi et al.

Examiner concedes that De Gaudenzi et al. "may be directed to a completely different purpose than the claimed invention." (Office Action 11/4/04, page 2, paragraph 3). Examiner asserts that De Gaudenzi et al. is properly combinable with other cited prior art for three reasons. First, De Gaudenzi et al. is valid prior art. Applicant understands this to mean that De Gaudenzi et al. have an earlier priority date than the instant application. Second, De Gaudenzi et al. is directed to wireless communications, such that there is a nexus with the claimed invention. This, however, is irrelevant to whether De Gaudenzi et al. may be properly combined with AAPA and Scott et al. under 35 U.S.C. § 103(a). The teaching or

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suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (MPEP § 2143). Finally, Examiner states "the passages relied on in De Gaudenzi are directed to 'practical systems.' Thus, the passages cited in De Gaudenzi provide knowledge that is well known in the art." Applicant respectfully submits that whether the teaching of De Gaudenzi et al. is practical or impractical is also irrelevant. There is no basis for Examiner's combination of AAPA with Scott et al. and with De Gaudenzi et al. apart from improper hindsight in view of the instant specification. "The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention." *Hodosh v. Block Drug Co., Inc.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986).

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. (MPEP § 2143). Applicant respectfully submits that Examiner has failed to meet these criteria. Moreover, the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). (MPEP § 2142). Examiner has failed to establish a *prima facie* case of obviousness. Thus, claims 1, 5-20, 22-34, 47-50, and 52-56 are patentable under 35 U.S.C. § 103(a) over AAPA in view of Scott et al. and further in view of De Gaudenzi et al.

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# 1. SUGGESTION OR MOTIVATION TO COMBINE REFERENCES

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Lee*, 277 F.3d 1338, 1342-44, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002) (discussing the importance of relying on objective evidence and making specific factual findings with respect to the motivation to combine references); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). (MPEP § 2143.01).

The disclosure of Scott et al. is directed to one primary issue. Scott et al. state "A preamble code may need to be identified rapidly, such as where a time slot is relatively short. This requirement generally suggests the use of short preamble codes." At the same time, the preamble code must be resistant to noise, interference, multipath effects, and false alarms. Otherwise, if a preamble is not properly identified at the receiver, the entire message is lost. (col. 2, lines 42-51). Scott et al. disclose two problematic solutions to a short, noise resistant preamble code. First, Scott et al. teach that transmit power may be increased for the preamble. This solution, however, creates undue interference for other users in the same or neighboring frequency spectra and is, therefore, unacceptable. (col. 2, lines 52-65). Next, Scott et al. teach that lengthening the preamble code improves discrimination. This solution, however, is also rejected, because it requires more complex synchronization filters and more time to detect the lengthened preamble code. (col. 2, line 66-col. 3, line 3). Therefore, one of ordinary skill in the art at the time of the present invention must conclude from Scott et al. that a short, noise

resistant preamble code is desirable and that increasing transmit power and increasing preamble code length are unacceptable solutions.

Neither AAPA nor Scott et al. disclose the step of “multiplying the spread code by a scrambling code associated with the base station, wherein the spread code has a length corresponding to a length of the scrambling code” as required by claim 1. Examiner relies on De Gaudenzi et al. (col. 7, lines 30-40) to disclose this limitation. (OA 11/4/04, page 2, paragraph 2). However, Scott et al. specifically teach away from such a combination. If each repeated code of Scott et al. is multiplied by a long scrambling code, the result is a code equal to the length of the preamble. Scott et al. specifically reject this solution, because it requires more complex synchronization filters and more time to detect the lengthened preamble code. (col. 2, line 66-col. 3, line 3). Thus, there is no teaching or suggestion by Scott et al. to suggest a combination with De Gaudenzi et al. to produce the present invention.

Scott et al. specifically state “In another aspect of the present invention, a repeated codeword preamble (RCP) code is formed by transmitting a single short codeword (i.e. subcode) several times in a row. At the receiver a relatively simple matched filter is used to generate a series of spikes separated by the period of the subcode.” (col. 3, lines 58-62). One of ordinary skill in the art at the time of the invention would realize that such a simple matched filter could not possibly decode the RCP of Scott et al. if it were multiplied “by a scrambling code associated with the base station, wherein the spread code has a length corresponding to a length of the scrambling code” as required by claim 1. Such a multiplication would break the repetitive structure of the RCP that Scott et al. are proposing. Without this repetitive structure, the simplified decode structure envisioned by Scott et al. at the receiver is not possible. Therefore, the teaching of Scott et al. precludes a combination with De Gaudenzi et al.

Moreover, the disclosure of De Gaudenzi et al. is directed to interference cancellation without the need of a known training sequence such as a preamble. (col. 6, lines 16-21). This

is a completely different purpose than the method of operating a wireless communications unit to request a connection with a base station as recited by claim 1. Examiner concedes that De Gaudenzi et al. "may be directed to a completely different purpose than the claimed invention." (Office Action 11/4/04, page 2, paragraph 3). By way of comparison, the present invention is directed to generating a preamble signal that is highly resistant to adverse Doppler effects. (page 9, lines 2-5). One of ordinary skill in the art at the time of the present invention would not find any suggestion by De Gaudenzi et al. to suggest a combination with AAPA or Scott et al. Therefore, such a combination can only be a result of Examiner's improper hindsight in view of the instant specification.

Furthermore, if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Here, the singular purpose of Scott et al. is to create a preamble code that may be identified rapidly, such as where a time slot is relatively short. This requires a short preamble code. Scott et al. specifically reject a long preamble code, because it requires more complex synchronization filters and more time to detect the lengthened preamble code. (col. 2, line 66-col. 3, line 3). Therefore, Examiner's proposed modification of Scott et al. by combining with De Gaudenzi et al. would render the prior art invention of Scott et al. unsatisfactory for its intended purpose. Thus, there is no suggestion or motivation to make the proposed modification. For all the foregoing reasons, therefore, applicant respectfully submits that claims 1, 5-20, 22-34, 47-50, and 52-56 are patentable under 35 U.S.C. § 103(a).

In summary, each of independent claims 1, 11, 20, 23, 30, and 47 specifically recites a combined preamble and scrambling code. Claim 25 recites "repeating the first code a plurality of times to produce a spread code having a predetermined length; and multiplying the spread code by a second code having the predetermined length." None of the references cited by Examiner, however, disclose a preamble combined with a scrambling code. Applicant respectfully submits that this combination is purely a result of Examiner's

improper hindsight in view of the instant specification. Thus, claims 1, 5-20, 22-34, 47-50, and 52-56 are patentable under 35 U.S.C. § 103(a).

## 2. REASONABLE EXPECTATION OF SUCCESS

A *prima facie* obviousness case requires a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Here, a combination of AAPA, Scott et al. and De Gaudenzi et al. offers no chance of success. Scott et al. specifically teach away from such a combination. If each repeated code of Scott et al. is multiplied by a long scrambling code of De Gaudenzi et al., the result is a code equal to the length of the preamble. Scott et al. specifically reject this solution, because it requires more complex synchronization filters and more time to detect the lengthened preamble code. (col. 2, line 66-col. 3, line 3). This is exactly the problem Scott et al. attempt to solve. Scott et al. state "A preamble code may need to be identified rapidly, such as where a time slot is relatively short. This requirement generally suggests the use of short preamble codes." (col. 2, lines 42-51). Such a combination, therefore, is self-defeating. Thus, applicant respectfully submits that claims 1, 5-20, 22-34, 47-50, and 52-56 are patentable under 35 U.S.C. § 103(a).

## 3. ALL CLAIM LIMITATIONS

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. § 103(a), then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). (MPEP § 2143.03).

Neither AAPA nor Scott et al. disclose the step of “multiplying the spread code by a scrambling code associated with the base station, wherein the spread code has a length corresponding to a length of the scrambling code” as required by independent claims 1 and 20. In a similar manner, independent claim 47 recites “correlating the first number of repeated groups of signals with a code having the second number of signals, *the code corresponding to the remote transmitter.*” Examiner relies on De Gaudenzi et al. (col. 7, lines 30-40) to disclose this limitation. (OA 11/4/04, page 2, paragraph 2). Therein, De Gaudenzi et al. state “In many practical systems (satellite or terrestrial), use is made of sequences composed of a unique internal sequence for each channel within a sector or beam (sequence Walsh-Hadamard or Gold) and an external sequence having the same timing and the same length as those of the internal sequence (pseudo-noise). Using a second slow external sequence with a pulse duration equal to the symbol duration permits to solve very large delay differences necessary for instance in case of combination of signals from different satellites. The length of this sequence is an integer multiple of the symbol duration.” De Gaudenzi et al. fail to disclose “a scrambling code associated with a base station” as required by claims 1 and 20 or “the code corresponding to the remote transmitter” as required by claim 47. They only disclose the external sequence has the same timing and the same length as the internal sequence. A combination of AAPA, Scott et al. and De Gaudenzi et al., even though improper, fails to disclose all the limitations of claims 1, 20, and 47. Thus, for all the foregoing reasons, applicant respectfully submits that claims 1, 5-20, 22-34, 47-50, and 52-56 are patentable under 35 U.S.C. § 103(a).

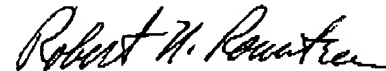
Claim 11 recites “receiving a signal corresponding to a preamble; arranging the signal into a bitstream having a scrambling code with a length corresponding to a length of the preamble code; de-interleaving bits from the bitstream, to group corresponding bits from each of a plurality of repetitions of a symbol length, into a plurality of groups.” Examiner relies on Miller for a disclosure of interleaving a bitstream and concludes de-interleaving is obvious in view of interleaving. However, Miller fails to disclose interleaving or de-interleaving a

preamble as recited by claim 11. Thus, applicant further submits that claims 11-19 are patentable under 35 U.S.C. § 103(a).

As previously stated, none of the references cited by Examiner disclose a preamble combined with a scrambling code. Only Examiner's improper hindsight in view of the instant specification produces this combination. For all the foregoing reasons, no combination of the cited references teaches or suggests all claim limitations as required for *prima facie* obviousness. Thus, applicant respectfully submits that claims 1, 5-20, 22-34, 47-50, and 52-56 are patentable under 35 U.S.C. § 103(a).

In view of the foregoing, applicant respectfully requests reconsideration and allowance of claims 1, 5-20, 22-34, 47-50, and 52-56. If the Examiner finds any issue that is unresolved, please call applicant's attorney by dialing the telephone number printed below.

Respectfully submitted,



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